



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,530	06/14/2002	Tomoe Kawane	020274	3022
23850	7590	06/05/2006		
ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP 1725 K STREET, NW SUITE 1000 WASHINGTON, DC 20006			EXAMINER ARMSTRONG, ANGELA A	
			ART UNIT	PAPER NUMBER
			2626	

DATE MAILED: 06/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/069,530	KAWANE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Angela A. Armstrong	2626	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3-5,8-11,13-15 and 18-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,8-11,13-15 and 18-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 14, 2006, has been entered.

### ***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claim 21 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

4. Claim 21 defines non-statutory subject matter because the computer-readable speech recognition program is not one of the statutory classes of inventions.

The claim fails to include limitations of functional descriptive material that can impart functionality when employed as a computer component to yield a useful, tangible, concrete result.

Applicant should note, however, that claims directed to speech or audio signal processing, would be considered to be statutory subject matter. For example, the requirement of the measurements of physical objects or activities to be transformed outside of the computer into

Art Unit: 2626

computer data (In re Gelnovatch, 595 F.2d 32, 41 n.7, 201 USPQ 136, 145 n.7 (CCPA 1979) (data- gathering step did not measure physical phenomenon); Arrhythmia, 958 F.2d at 1056, 22 USPQ2d at 1036), where the data comprises signals corresponding to physical objects or activities external to the computer system, and where the process causes a physical transformation of the signals which are intangible representations of the physical objects or activities. Schrader, 22 F.3d at 294, 30 USPQ2d at 1459 citing with approval Arrhythmia, 958 F.2d at 1058-59, 22 USPQ2d at 1037-38; Abele, 684 F.2d at 909, 214 USPQ at 688; In re Taner, 681 F.2d 787, 790, 214 USPQ 678, 681 (CCPA 1982).

Examples of this type of claimed statutory process include the following:

- A method of using a computer processor to analyze electrical signals and data representative of human cardiac activity by converting the signals to time segments, applying the time segments in reverse order to a high pass filter means, using the computer processor to determine the amplitude of the high pass filter's output, and using the computer processor to compare the value to a predetermined value. In this example the data is an intangible representation of physical activity, i.e., human cardiac activity. The transformation occurs when heart activity is measured and an electrical signal is produced. This process has real world value in predicting vulnerability to ventricular tachycardia immediately after a heart attack.

- A method of using a computer processor to receive data representing Computerized Axial Tomography ("CAT") scan images of a patient, performing a calculation to determine the difference between a local value at a data point and an average value of the data in a region surrounding the point, and displaying the difference as a gray scale for each point in the image, and displaying the resulting image. In this example the data is an intangible representation of a

Art Unit: 2626

physical object, i.e., portions of the anatomy of a patient. The transformation occurs when the condition of the human body is measured with X-rays and the X-rays are converted into electrical digital signals that represent the condition of the human body. The real world value of the invention lies in creating a new CAT scan image of body tissue without the presence of bones.

- A method of using a computer processor to conduct seismic exploration, by imparting spherical seismic energy waves into the earth from a seismic source, generating a plurality of reflected signals in response to the seismic energy waves at a set of receiver positions in an array, and summing the reflection signals to produce a signal simulating the reflection response of the earth to the seismic energy. In this example, the electrical signals processed by the computer represent reflected seismic energy. The transformation occurs by converting the spherical seismic energy waves into electrical signals which provide a geophysical representation of formations below the earth's surface. Geophysical exploration of formations below the surface of the earth has real world value.

Examples of claimed processes that independently limit the claimed invention to safe harbor include:

- a method of conducting seismic exploration which requires generating and manipulating signals from seismic energy waves before "summing" the values represented by the signals (Taner, 681 F.2d at 788, 214 USPQ at 679); and

- a method of displaying X-ray attenuation data as a signed gray scale signal in a "field" using a particular algorithm, where the antecedent steps require generating the data using a particular machine (e.g., a computer tomography scanner). Abele, 684 F.2d at 908, 214 USPQ

Art Unit: 2626

at 687 ("The specification indicates that such attenuation data is available only when an X-ray beam is produced by a CAT scanner, passed through an object, and detected upon its exit. Only after these steps have been completed is the algorithm performed, and the resultant modified data displayed in the required format.").

Examples of claimed processes that do not limit the claimed invention to pre-computing safe harbor include:

- "perturbing" the values of a set of process inputs, where the subject matter "perturbed" was a number and the act of "perturbing" consists of substituting the numerical values of variables (Gelnovatch, 595 F.2d at 41 n.7, 201 USPQ at 145 n.7 ("Appellants' claimed step of perturbing the values of a set of process inputs (step 3), in addition to being a mathematical operation, appears to be a data-gathering step of the type we have held insufficient to change a nonstatutory method of calculation into a statutory process.... In this instance, the perturbed process inputs are not even measured values of physical phenomena, but are instead derived by numerically changing the values in the previous set of process inputs.")); and,

selecting a set of arbitrary measurement point values (Sarkar, 588 F.2d at 1331, 200 USPQ at 135). If a claim does not clearly fall into one or both of the safe harbors, the claim may still be statutory if it is limited to a practical application in the technological arts.

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Art Unit: 2626

5. Claims 1, 4, 5-7, 11, 14-17, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2500761 in view of JP 60-16200 and further in view of Ichikawa et al (US Patent No. 4,985,923).

6. Regarding claims 1, 11, and 21, the partial translation of JP 2500761 discloses a speech recognition device (20), comprising: an input unit (11) for inputting a digital sound signal (page 1, lines 12-16); a sound level estimator for estimating the sound level of a sound period based on the digital sound signal in a part of said sound period input by said input unit, and which thereby detects the starting point of the sound signal (page 1, lines 15-16); sound level adjuster that adjusts (19) the level of the digital sound signal in said sound period input by said input unit based on the sound level estimator and a preset target level (page 1, line 17 to page 2, line 10; page 2, line 14 to page 3, line 9; page 3, line 13 to page 6, line 21); and speech recognition unit (20) that performs speech recognition based on the digital sound signal adjusted by said sound level adjuster (page 3, line 13 to page 6, line 21). JP 2500761 discloses a sound level estimator that estimates the sound level of said sound period based on the digital sound signal in a prescribed time period at the beginning of said sound period input by said input means (page 3, line 13 to page 6, line 21).

JP 2500761 (partial translation) does not teach the system utilizes a delay circuit or storing circuit. However, JP60-16200 (partial translation) provides for a voice input is delayed, and thereby necessarily detected from some starting point, in response to the output timing of a gain control signal, for the purpose of achieving high fidelity, a high recognition rate and reliable automatic gain control. It would have been obvious to one of ordinary skill at the time of the invention to modify the JP 2500761 recognition system to provide for a delay or storing circuit

Art Unit: 2626

for delaying a sound signal in response to a gain signal for the purpose of achieving reliable automatic gain control, as suggested by JP60-16200.

JP 2500761 (partial translation) does not teach alternately storing and outputting the digital sound signal using a first and second buffer. However, Ichikawa teaches the implementation of multiple buffers or multiple holding sections of a buffer to allow for the processing of one set of speech data while another set of data (or the next set of speech data) is held uninterruptedly (col. 4, lines 4-9) and it would have been obvious to one of ordinary skill at the time of the invention to modify the system of JP 2500761 to provide for multiple buffers or multiple holding sections of a buffer, as suggested by Ichikawa, for the purpose of allowing for the processing of the first set of speech data while the next set of speech data is held uninterrupted, thereby minimizing the risk of lost data and reducing recognition error.

7. Regarding claims 4 and 14, JP 2500761 discloses the sound level adjusting means amplifies or attenuates the level of the digital sound signal in said sound period input by said input means by an amplification factor determined by the ratio between said preset target level and the sound level estimated by said sound level estimation means (page 3, line 13 to page 6, line 21).

8. Regarding claims 5 and 7 and 15 and 17, JP 2500761 (partial translation) does not teach the system utilizes a delay circuit or storing circuit. However, JP60-16200 (partial translation) provides for a voice input is delayed in response to the output timing of a gain control signal, for the purpose of achieving high fidelity, a high recognition rate and reliable automatic gain control. It would have been obvious to one of ordinary skill at the time of the invention to modify the JP 2500761 recognition system to provide for a delay or storing circuit for delaying a sound signal



Art Unit: 2626

in response to a gain signal for the purpose of achieving reliable automatic gain control, as suggested by JP60-16200.

9. Claims 3, 10, 13, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2500761 in view of JP60-16200 and Ichikawa, and further in view of JP 126093 (Okamoto).

10. Regarding claims 3, 10, 13, and 20, JP 2500761 (partial translation) does not teach a processor to inactivate the sound level adjusting when the sound level is within a predetermined range. However, JP 126093 (partial translation) determines if a sound signal level is within a prescribed range to obtain a high recognition rate. It would have been obvious to one of ordinary skill at the time of the invention to modify the system providing in JP2500761 to determines if a sound signal level is within a prescribed range, as suggested by Okamoto, for the purpose of obtaining a high recognition rate and thereby improve system performance, as suggested by Okamoto (see Abstract).

11. Claims 8-9 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2500761 in view of JP60-16200 and Ichikawa, and further in view of JP2975808 (Koichi).

12. Regarding claims 8-9 and 18-19, JP 2975808 (partial translation) does not teach the system utilizes a speech recognition feedback to the adjusting circuit. However, JP2975808 (partial translation) to Koichi provides for a learning effect of the system such that the recognition result is feedback into the system for the purpose of improving the precision of the recognizer. It would have been obvious to one of ordinary skill at the time of the invention to

Art Unit: 2626

modify the JP2500761 recognition system to provide a recognition result feedback path, as suggested by Koichi, for the purpose of improving the precision and performance of the recognizer, as also suggested by Koichi.

***Response to Arguments***

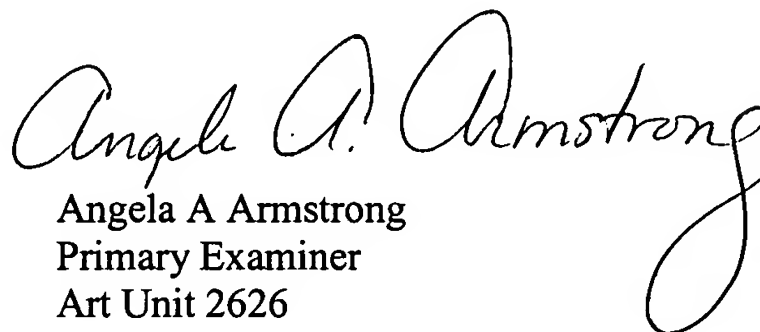
13. Applicant's arguments with respect to claims 1, 11, and 21 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela A. Armstrong whose telephone number is 571-272-7598. The examiner can normally be reached on Monday-Thursday 11:30-8:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Please note the change in art unit designation for the examiner from old art unit "2654" to new art unit "2626."

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Angela A Armstrong  
Primary Examiner  
Art Unit 2626

AAA  
May 30, 2006